

Solar panels too pricey? Consider leasing rooftop instead

Building solar energy generators remains unappealing for entrepreneurs and the public alike because of the high upfront investment. Some businesses are making a breakthrough, leasing their rooftops for solar panels.

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In its *Indonesia Energy Outlook 2018* report, the Agency for Assessment and Application of Technology (BPPT) had a chilling word or warning: Unless the country reduces its dependence on nonrenewable energy, it will face a power crisis in as little as a decade. A net importer of oil since 2004, Indonesia could become a net importer of other energy sources as well. The agency predicts the country may become a net importer of natural gas by 2028 and coal by 2038. “Indonesia will still produce oil and coal, but it has to import

to meet demand,” says Andhika Prastawa, the chairperson of Indonesia Solar Energy Association. “To mitigate the energy crisis, we need to explore other energy sources, like renewables.” Renewable energy is seeing rapid growth globally. One of the most feasible clean energy sources is the sun. Unlike hydropower plants that require strong water currents or wind turbines that need high average wind speed, solar panels can work whenever and wherever there is sunlight. Moreover, solar panels produce multiple benefits, such as saving on electricity bills and slashing emissions. Still, Indonesia has yet to effectively tap its enormous solar energy potential. As of 2018, In-



Make way for sustainable energy: An officer checks solar cells at a hydropower plant in Purwakarta, West Java.



Multipurpose canopy: Tokopedia Tower in South Jakarta has two 13.4-kWp solar canopies that also function as roofs for its parking lots.



Courtesy of Xurya

Power of the sun: Solar cells are installed on the rooftop of the Plaza Indonesia shopping mall in Central Jakarta.

donesia had 90 MW of installed on-grid solar PV capacity. That is a far cry from other Southeast Asian countries like the Philippines and Thailand, which had around 903 MW and 2.8 GW of on-grid capacity, respectively. Clean energy advocates and solar business players have cited the high upfront investment and a lack of information on the technology as major hurdles discouraging people from tapping into solar power. Prospective investors are still unconvinced that the long-term benefits will cover the sky-high initial costs. Local solar power companies, like Xurya, Surya Utama Nuansa (SUN) and SMS NuEnergy, have come up with a novel idea – getting the owners of industrial and commercial buildings to lease their rooftops for solar panels. Under this scheme, no upfront cost is needed. Building owners only need to pay for the solar power at lower rates than those offered by state-owned electricity company PLN. This will make investors save up to 10 percent on their electricity bills,

the solar companies promise. Contract details vary depending on the company and the size of the solar system. Companies can count on the solar panels for power, making the system suitable for buildings in use seven days a week. “Our market is manufacturers and industries with a strong financial performance,” says solar contractor SMS NuEnergy technical director Amran Mohamad. Some solar energy companies, like Xurya, only charge for the electricity used in the building rather than the total produced by the solar panels. “When we do the assessment, we tend to select buildings with six working days. In most cases, we don’t accept buildings with a two-day weekend.” Moreover, the leasing system suits the commercial and industrial sectors even without storage devices like batteries. The solar panels generate power during the day, which can be used immediately to supply the buildings that start their activities when the sun shines.

In the leasing agreement, the solar system is owned by the solar companies. If one day the building owners want to terminate the contract, they have to pay the remaining price of the equipment. “Users can end their long-term contract by paying off the installment to us,” says Xurya founder Eka Himawan. Building owners who want to end the contract can pay the solar company to cover the shortfall of the installation cost, which has been agreed by the two parties. This gives the building owner ownership of the solar panel modules. Leasing can be an option for those interested in renewables but deterred by the hefty upfront investment. They can eventually buy the rooftop solar system if they wish, or continue renting it. In Indonesia, most solar companies offer leasing options only to businesses rather than to households. E-commerce platform Tokopedia, luxury hotel chain Grand Hyatt, shopping mall Plaza In-

donesia, shipping company Mu-lia Bosco Sejahtera and furniture store Bika Living are among those leasing their rooftops for solar power. Tokopedia has installed a solar canopy in the parking lot of its office building in South Jakarta, the Tokopedia Tower. “We want to support alternative energy,” says Tokopedia corporate communications vice president Nuraini Razak. “This may be a new initiative, but it can be the first step towards a [greener environment].” Property developer Ciputra Group, the owner of the Tokopedia Tower, which was formerly named Ciputra World 2 Jakarta, seeks to install more solar panels at other properties in the future. “We have surveyed some of our shopping mall buildings, and it is possible to install solar there,” says Ciputra Property director Sugwantono Tanto. “We hope other developers will follow suit [in this solar movement], so they can manage their electricity more efficiently and reduce their carbon emissions.”

How Indian hotels are focusing on energy efficiency

One of the significant components of operating cost in hotels is the energy consumption, which the industry is seeking to address as the price of energy continues to rise and the usage also increases.

The hospitality industry has always focused on customer comfort and convenience as their primary objective. Providing a memorable customer experience through a combination of room features, hotel amenities and level of service has rightly been the dominant aspect of the thinking in this industry. But, increasingly with profit margins under pressure, Indian hotels are looking at ways to improve their cost structure. One of the significant components of operating cost in hotels is the energy consumption, which the industry is seeking to address as the price of energy continues to rise and the usage also increases as hotels offer more amenities for the guests. The energy in hotels is consumed most significantly by air conditioning followed by lighting and lastly that consumed by building level assets like motors, pumps, refrigeration and elevators. For many of the hotels that are in operation, it is not feasible to switch such energy consuming assets and replace them with more energy efficient versions. Not only is it expensive to effect such a change, but it is also disruptive to the operation of the business. Most hotels that are in operation would not want to even lose a single day of revenue from rooms that have the potential to be occupied or to have solutions that require re-wiring or other such types of construction activities that would disturb the experience of their guests. Fortunately, there are a few options that hotel owners and operators have recognized that can be deployed by them without changes to most of their

existing electrical assets. These solutions also can be deployed often quickly without being disruptive to the guests or imposing on the revenue stream of the hotel. There are three types of solutions that are being pursued by hotels in recent year:

- Efficient room air conditioning management.
- Sensor-based lighting
- Building Management Systems (BMS)– for centralized control.

Guest room air conditioning is one of the major guzzlers of energy. The older the air conditioner the more likely it is that the energy consumption is higher for the same tonnage. Most often the air conditioning systems in hotel rooms are variable refrigerant flow (VRF) or split AC’s. In some luxury hotels they tend to commonly be centralized AC systems. The controls for these air conditioners are either infrared (IR) remotes that are provided in each room, or in the case of centralized systems, there are thermostats present in each room. Hotels sometimes control the power to the room, using key card holders where the guest must insert their card keys to provide power to the room. But that solution does not work well for air conditioners, since cutting off power to also reduce the life of the air condition-

er. Also, once turned off in this manner, it requires guests to use the remote control to restore the air conditioner to working condition. In the case of the thermostat controlled room, it is not a feasible option to turn off the power to the thermostat. So the latest technologies in Smart Automation allow for thermostats and IR control nodes to be triggered from the key card holder which operate well to manage the air conditioner both when guests are in the room and out. The writer of this article had this to say about these technologies, “These new technologies operate wirelessly and can be retrofitted to existing hotels so that they trigger the air conditioners on or off without having to disrupt their power supply constantly, allowing for energy efficiency and longer life for the air conditioners whether they are VRF, split or central”. Lighting is an area where more and more hotels are switching to efficient LED’s instead of the traditional incandescent or CFL lighting and seeing the benefits of lower energy consumption. But in many areas such as aisles, passageways and bathrooms there is still significant energy wasted when lights continue to work even when no one is pres-

ent. Many hotels are now adopting PIR (passive infra-red motion sensors) and daylight sensors in these spaces to minimize the consumption of energy without impacting customer experience. These sensors can be wireless or wired and can be retrofitted to existing situations to work, and they are able to turn off the lights when either no one is present in that space where they are placed or there is sufficient daylight. This allows a substantial reduction in energy consumption for lighting. Building Management Systems (BMS) are relatively new technologies being pursued by hotels. state-of-the-art technologies such as ‘Internet of Things (IoT)’ are enabling the creation of economical BMS options that can be often even be retrofitted into existing hotels. These BMS systems enable centralized control as the means of energy efficiency to the hotel operators. All lighting and air conditioning in common areas are controllable from a centralized location using the BMS system. This is especially useful to eliminate energy wastage in areas such as banquet rooms, conference rooms, aisles, stairways and other spaces. If smart energy meters are used, then the actual energy consumption can be live monitored to identify unexpected spikes in usage and to make corrections. So, by embracing some of the latest technologies in smart automation available to them, both new and existing hotels are finding ways to achieve greater energy efficiencies without sacrificing the comfort that they provide to their guests. (ANN/The Statesman/Narendra Bhat)

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